

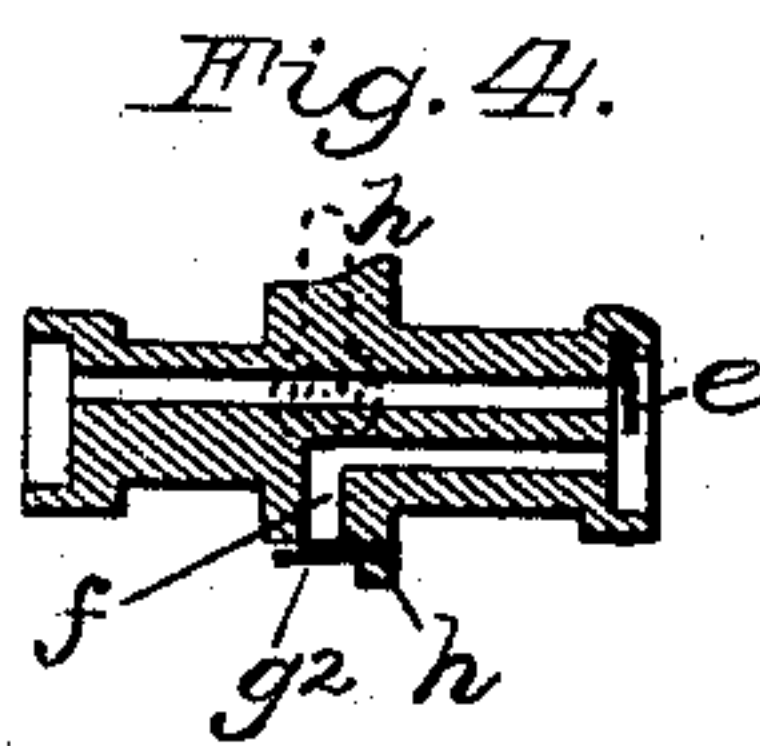
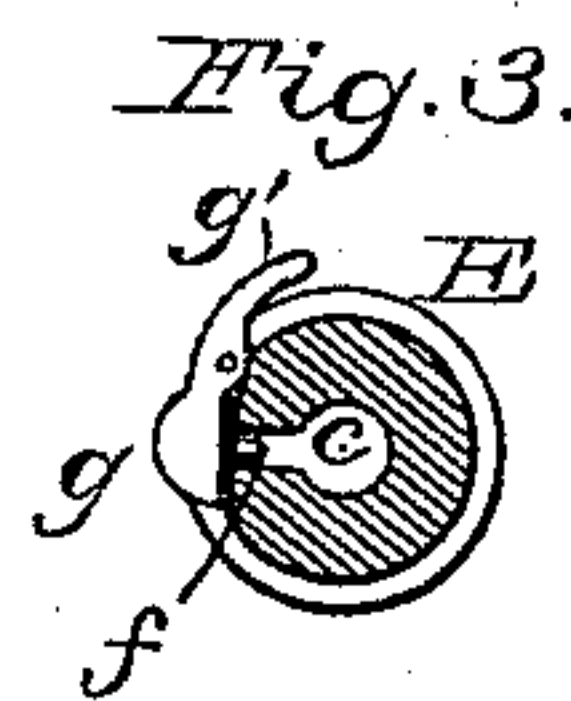
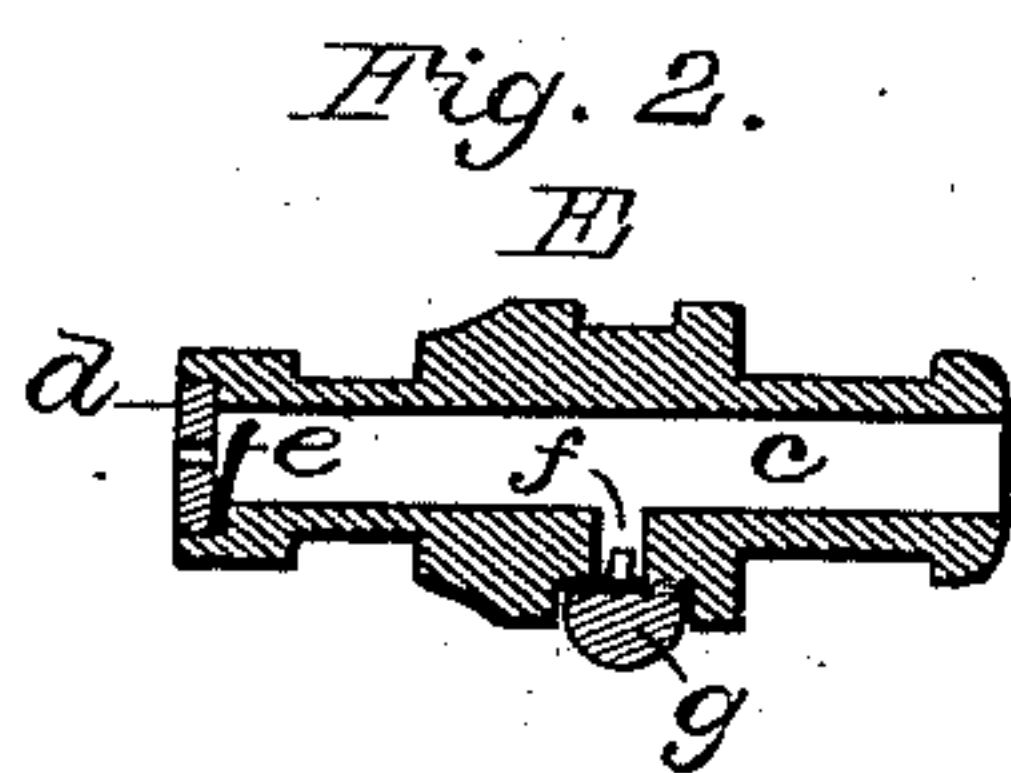
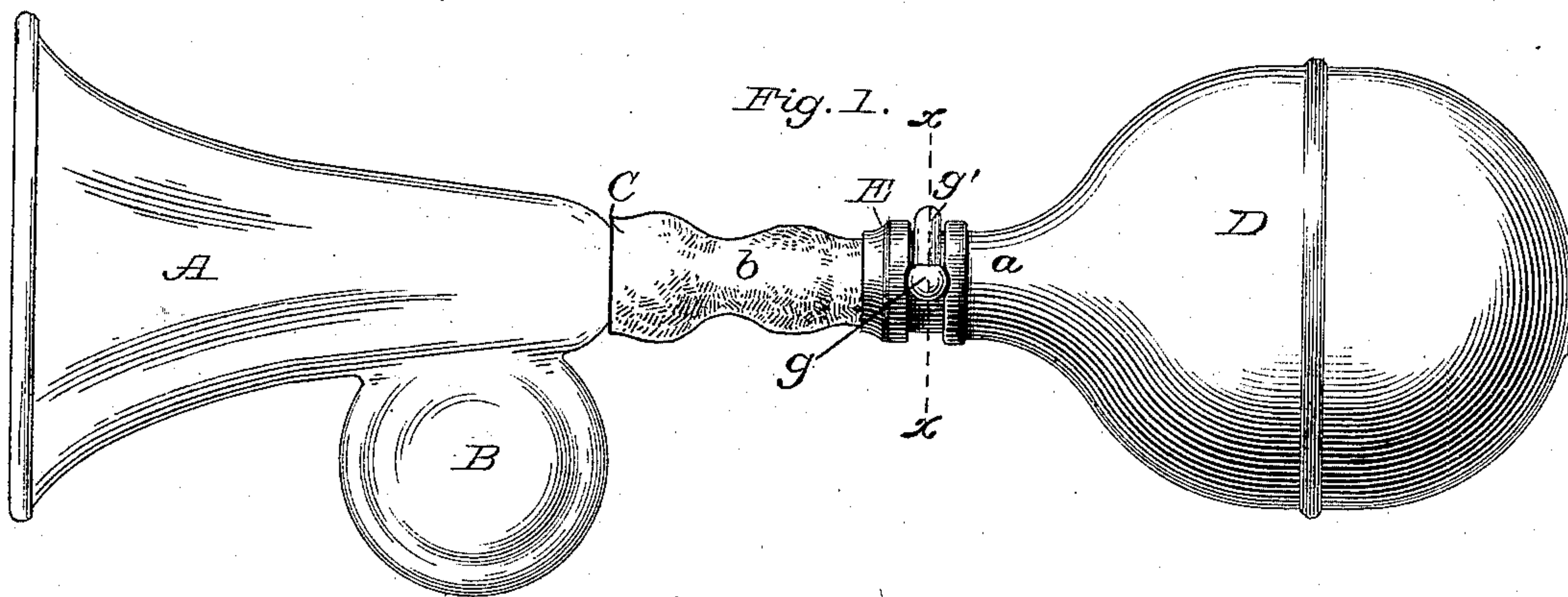
(No Model.)

W. A. TURNER.

BREAST PUMP.

No. 316,584.

Patented Apr. 28, 1885.



Attest:  
Philip F. Larnier.  
Howell Bartlett.

Inventor:  
William A. Turner.  
By *Wm. E. Wood*  
Attorney.



# UNITED STATES PATENT OFFICE.

WILLIAM A. TURNER, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF  
TO WILLIAM C. WOOD, OF WASHINGTON, DISTRICT OF COLUMBIA.

## BREAST-PUMP.

SPECIFICATION forming part of Letters Patent No. 316,584, dated April 28, 1885.

Application filed November 28, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. TURNER, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Breast-Pumps; and I do hereby declare that the following specification, taken in connection with the drawings furnished and forming a part of the same, is a clear, true, and complete description of my invention.

The object sought by me is to produce, at comparatively low cost, a compact, simple, durable, and effective breast-pump which can be promptly and conveniently released from adhesion to the breast.

It is well known that when breast-pumps are used upon sore and delicate breasts the pain is sometimes so intense that instant relief should be afforded, and for accomplishing that purpose breast-pumps have been heretofore provided with elastic vacuum-bulbs of peculiar shape, which were detachable from the pump. Others have had a slitted flexible pipe between the vacuum-bulb and the mouth-piece of the pump, so that when said slitted pipe is bent in a certain direction the slit will be open and air admitted, and therefore when the pump is in use said slitted pipe must be held in a particular position in order that the slit referred to can be maintained in a closed condition, and the elastic vacuum-bulbs of such pumps are of necessity provided with two opening—one for receiving an eduction-valve, and the other for connecting with the slitted tube.

A breast-pump embodying my invention has a glass mouth-piece of common form, and also a vacuum-bulb having a single opening therein, and an externally-accessible releasing-valve. In its best form my releasing-valve also operates as an exit-valve, through which air is forced from the bulb; but separate valves may be employed without departure from certain portions of my invention.

The releasing-valve is located upon a rigid coupling-piece provided with internal air-passages, and located between the bulb and mouth-piece, and although such a construction constitutes one portion of my invention, it is to be understood that I do not limit myself to

the mere matter of the location of said releasing-valve.

To more particularly describe my invention I will refer to the accompanying drawings, in which—

Figure 1 is a side view of one of my pumps in its best form. Fig. 2 is an enlarged horizontal longitudinal sectional view of the rigid coupling-piece. Fig. 3 is a vertical section of said coupling-piece on line *x*, Fig. 1. Fig. 4 is a longitudinal section of a coupling-piece differently constructed and provided with a cheaper variety of releasing-valve.

The glass mouth-piece A, its milk-reservoir B, and bulbous end C are all as heretofore.

The rubber vacuum-bulb D is provided with a neck, *a*, but has no other aperture.

The coupling-piece E (shown in Figs. 1, 2, and 3) may be composed of any sufficiently-rigid material, such as wood or hard rubber; but white metal is deemed preferable. At its rear end it has a bulbous neck of common form, for enabling a firm interior engagement with the neck *a* of the vacuum-bulb in a manner well known, and at its front end it is similarly formed for like engagement with the short flexible and elastic rubber tube *b*, by means of which the coupling-piece and the glass mouth-piece are united. This coupling-piece has a central longitudinal air-passage, *c*; but at its front end it is chambered or recessed for the reception of a disk, *d*, which is centrally perforated, and between said disk and the bottom of the chamber a small flat thin piece of vulcanized rubber, *e*, is secured at one side, so that when said disk is fastened in by burnishing the end of the coupling-piece it cannot be displaced, but will be free to operate as a hinged valve for guarding the aperture in the disk as against the forcible passage of air from the bulb toward the mouth-piece. About midway of its length this coupling-piece is also provided with a lateral air-passage, *f*, which communicates with the central passage, *c*, and has its entrance guarded by a releasing-valve, *g*. As shown in Figs. 1 to 3, inclusive, this valve is located upon one side of the coupling-piece, and has a vertically-projecting thumb-piece, *g'*, and is secured to the coupling-piece by means of a



loose pivot, which enables the lower or operative end of the valve to vibrate freely toward and from its seat.

For securing an air-tight closure of the passage *f*, the valve has a thin film of rubber on its face, and said face is also provided with a central pin, which holds the rubber, and also enters the air-passage *f*, and to that extent serves to close the aperture; but these details of construction may be varied without departure from this portion of my invention, the gist of which is a coupling-piece provided with a readily-accessible and easily-manipulated releasing-valve, by which air can be promptly admitted for relieving the suction upon a breast.

All breast-pumps having a bulb capable of progressively inducing a vacuum must of necessity have an exit-valve, which, like valve *g*, enables the discharge of air from the bulb, and I have for the first time organized an exit-valve so that it performs the additional function of a releasing-valve; and this feature constitutes another portion of my invention.

In Fig. 4 I show a coupling-piece which is suited for use only upon the cheapest lines of goods. In this construction the two air-passages are wholly distinct from each other. The air-passage *c* extends from end to end, as before described; but the valve *e* is located at the rear end of the coupling, and is a simple flap of thin rubber, which can be held in place by bending inwardly thereon a portion of one side of the coupling. The air-passage *f* extends longitudinally from the rear end of the coupling-piece for a short distance, and thence extends laterally through the side thereof, and adjacent to its entrance the outside of the coupling-piece is flattened to form a seat for the valve *g*<sup>2</sup>, which, as here shown, is a thin flap of flexible rubber, secured at one side by being clinched within a slitted opening formed in the annular rim *h*. This releasing-valve *g*<sup>2</sup> has no thumb-piece; but it is nevertheless accessible and easily manipulated, it being obvious that said valve may be readily manipulated for lifting it.

In operation the mouth-piece is applied to a

breast and the vacuum-bulb compressed, thus forcing the air therefrom through the air-passage *f*, and on releasing the bulb from pressure the valve *g* or *g*<sup>2</sup> will prevent the induction of air to the bulb, except such as will be drawn from the interior of the mouth-piece through the air-passage *c*, the valve *e* preventing the passage of air from the bulb to the mouth-piece when the bulb is next compressed. By thus working the vacuum-bulb a few times a desirable vacuum is induced within the mouth-piece for effecting the draft of milk from a nipple, and at any time a prompt relief will be afforded by manipulating the releasing-valve, which admits external air to the bulb. Although the air thus admitted to the bulb does not at once enter the mouth-piece, a speedy release is afforded, and, when the cost of an extra valve need not be considered, the releasing-valve may open into a passage communicating directly with the mouth-piece, as illustrated in dotted lines in Fig. 4.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a breast-pump, the combination of the mouth-piece, the vacuum-bulb having a single opening therein, and the intermediate rigid coupling-piece provided with internal air-passages and the externally-accessible releasing-valve, substantially as described.

2. In a breast-pump, the combination of the mouth-piece, the vacuum-bulb having a single opening therein, the intermediate coupling-piece provided with air-passages, and the releasing-valve having a thumb-piece for conveniently controlling the entrance of air to the bulb, substantially as described.

3. In a breast-pump, a valve operating as an exit-valve for the passage of air forced from the vacuum-bulb, and provided with a thumb-piece, by which it is made to operate also as an externally-accessible releasing-valve, substantially as described.

WILLIAM A. TURNER. [L. S.]

Witnesses:

MURDOCH W. MCKENZIE,  
JOHN R. SUTER.